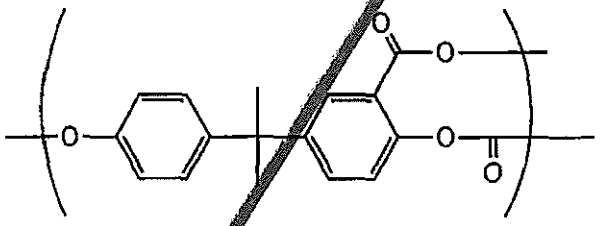
WHAT IS CLAIMED IS:

1. An aromatic polycarbonate resin which is obtainable from an ester exchange reaction of an aromatic dihydroxy compound and a carbonic acid diester, and satisfies such the following conditions (1) to (3) that:

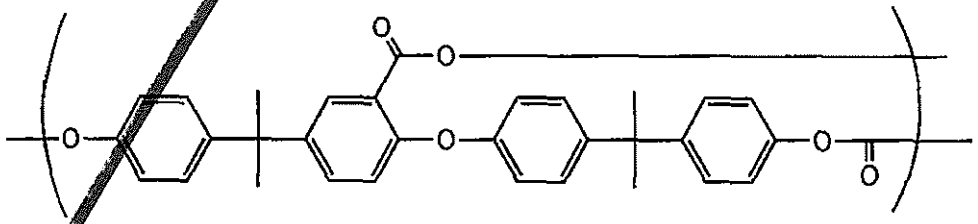
(1) viscosity-average molecular weight is 13,000 to 30,000;

(2) the amount of the residual aromatic monohydroxy compound and the amount of the residual aromatic dihydroxy compound in the resin are each not more than 20 ppm; and

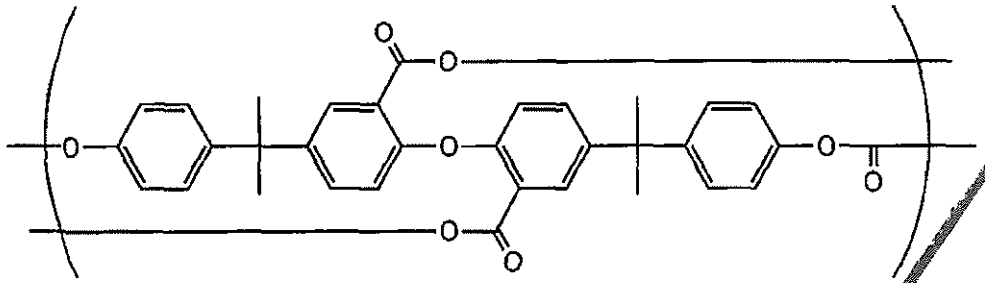
(3) the resin contains at least one of the structural units of the following formulae (1) to (5), with the total amount of such structural units being 1,000 to 6,000 ppm:



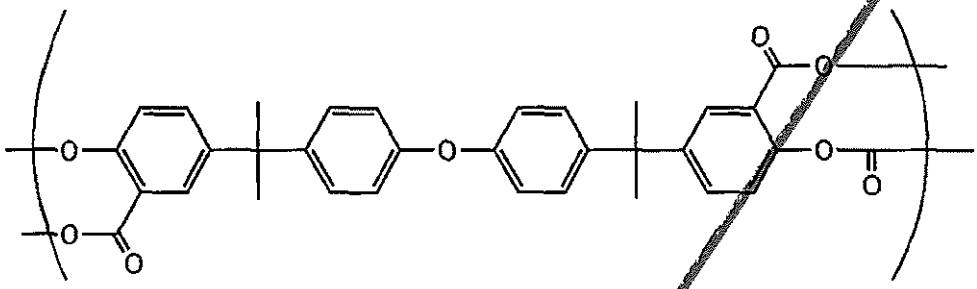
(1)



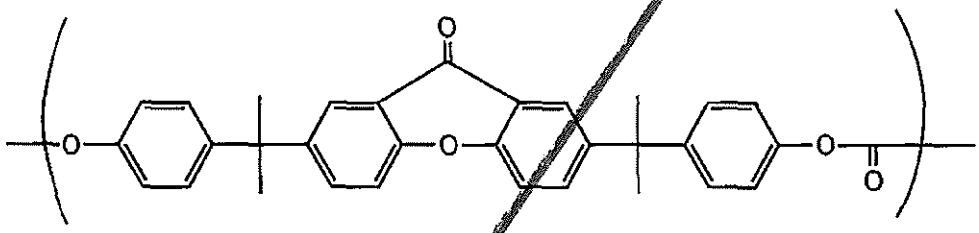
(2)



(3)



(4)



(5)

2. A process for producing a polycarbonate resin reduced in content of volatile impurities by subjecting a polycarbonate resin containing volatile impurities to melt devolatilization, said melt devolatilization of the resin being carried out after it has been passed through a polymer filter.

3. The process according to Claim 2, wherein melt devolatilization is carried out by using an apparatus having a polymer filter disposed between at least two vented melt extruders connected in series to each other.

4. The process according to Claim 2 or 3, wherein an extruder with screws revolving in the same direction is used for the first vented melt extruder, and a partially intermeshed oppositely revolving screw type extruder is used for the last vented melt extruder.

5. The process according to any one of Claims 2 to 4, wherein the molten resin temperature in the last vented melt extruder is lower than that in the first vented melt extruder.

6. The process according to any one of Claims 2 to 5, wherein the residence time of the molten resin in the last vented melt extruder is shorter than that in the first vented melt extruder.

7. The process according to any one of Claims 2 to 6, wherein the vent pressure in the last vented melt extruder is lower than that in the first vented melt extruder.

8. The process according to any one of Claims 2 to 7 using a devolatilization assistance in the extruders.

9. The process according to any one of Claims 2 to 8

using a polycarbonate resin producing apparatus comprising at least one reactor and at least one extruder, at least one of the extruders being a vented melt extruder, and a polymer filter provided at the inlet side of the vented melt extruder (inlet side of the last vented melt extruder in case where two or more vented melt extruders are provided), wherein a dihydroxy compound and a carbonic acid diester are ester exchanged in the reactor, and melt removal of volatile impurities is carried out by the extruder.

10. The process according to any one of Claims 1 to 8, wherein the viscosity-average molecular weight of the polycarbonate resin is 13,000 to 30,000.

11. A process for producing a polycarbonate resin from a dihydroxy compound and a carbonic acid diester by an ester exchange method using a polycarbonate resin producing apparatus comprising at least one reactor and at least one extruder, in which when the extruder inlet resin temperature is represented by T1 (°C) and the extruder outlet resin temperature by T2 (°C), T2 is not higher than 370°C, and ΔT given by the following equation (I) is not higher than 70°C:

$$\Delta T = T2 - T1 \qquad (I)$$

12. The process according to Claim 11, wherein the

difference between the maximum preset temperature (Tmax) and the minimum preset temperature (Tmin) of the extruder barrel satisfies the following equation (II):

$$Tmax - Tmin = 40 \text{ to } 120°C \quad (II)$$

13. The process according to Claim 12, wherein Tmin is 200 to 240°C.

14. The process according to any one of Claims 11 to 13, wherein at least one of said extruders is a vented melt extruder.

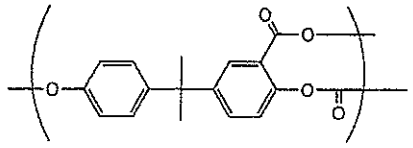
15. The process according to Claim 14, wherein the last one of said extruders is a vented melt extruder.

16. The process according to any one of Claims 11 to 15 using a devolatilization assistant in the extruders.

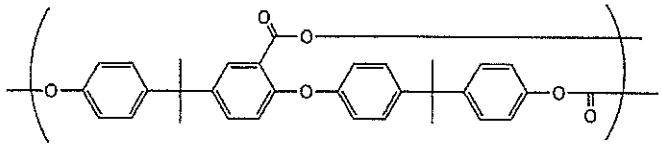
17. The process according to any one of Claims 11 to 16, wherein the viscosity-average molecular weight of the polycarbonate resin is 13,000 to 30,000.

CLAIMS

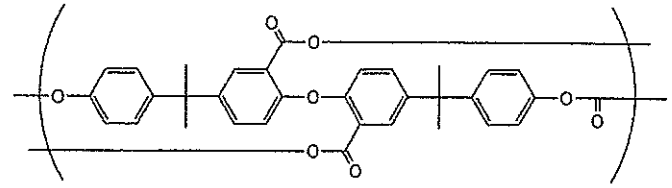
1. An aromatic polycarbonate resin which is obtainable from an ester exchange reaction of an aromatic dihydroxy compound and a carbonic acid diester, and satisfies such the following conditions (1) to (3) that:
(1) viscosity-average molecular weight is 13,000 to 30,000;
(2) the amount of the residual aromatic monohydroxy compound and the amount of the residual aromatic dihydroxy compound in the resin are each not more than 20 ppm; and
(3) the resin contains at least one of the structural units of the following formulae (1) to (5), with the total amount of such structural units being 1,000 to 6,000 ppm:



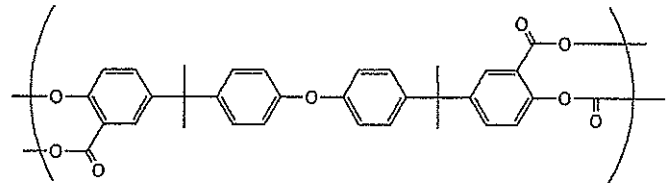
(1)



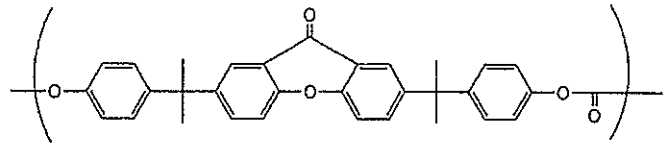
(2)



(3)



(4)



(5)

2. A process for producing a polycarbonate resin by subjecting a polycarbonate resin containing volatile impurities to melt devolatilization, wherein the melt devolatilization is carried out by using an apparatus having a polymer filter disposed between at least two vented melt extruders connected in series to each other, and is carried out after it has been passed through a polymer filter.

3. The process according to Claim 2, wherein an extruder with screws revolving in the same direction is used for the first vented melt extruder, and a partially intermeshed oppositely revolving screw type extruder is used for the last vented melt extruder.

4. The process according to Claim 2, wherein the molten resin temperature in the last vented melt extruder is lower than that in the first vented melt extruder.

5. The process according to Claim 2, wherein the residence time of the molten resin in the last vented melt extruder is shorter than that in the first vented melt extruder.

6. The process according to Claim 2, wherein the vent pressure in the last vented melt extruder is lower than that in the first vented melt extruder.

7. The process according to Claim 2 using a devolatilization assistance in the extruders.

8. The process according to Claim 2 using a polycarbonate resin producing apparatus comprising at least one reactor and at least one extruder, at least one of the extruders being a vented melt extruder, and a polymer filter provided at the inlet side of the vented melt extruder (inlet side of the last vented melt extruder in case where two or more vented melt extruders are provided), wherein a dihydroxy compound and a carbonic acid diester are ester exchanged in the reactor, and melt removal of volatile impurities is carried out by the extruder.

9. The process according to Claim 2, wherein the viscosity-average molecular weight of the polycarbonate resin is 13,000 to 30,000.

10. A process for producing a polycarbonate resin from a dihydroxy compound and a carbonic acid diester by an ester exchange method using a polycarbonate resin producing apparatus comprising at least one reactor and at least one extruder, in which when the extruder inlet resin temperature is represented by T1 (°C) and the extruder outlet resin temperature by T2 (°C), T2 is not higher than 370°C, and ΔT given by the following equation (I) is not higher than 70°C:

$$\Delta T = T2 - T1 \qquad (I)$$

11. The process according to Claim 10, wherein the difference between the maximum preset temperature (Tmax) and the minimum preset temperature (Tmin) of the extruder barrel satisfies the following equation (II):

$$Tmax - Tmin = 40 \text{ to } 120°C \qquad (II)$$

12. The process according to Claim 11, wherein Tmin is 200 to 240°C.

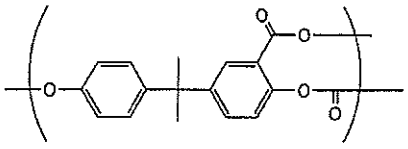
13. The process according to Claim 10 or 11, wherein at least one of said extruders is a vented melt extruder.

14. The process according to Claim 13, wherein the last one of said extruders is a vented melt extruder.

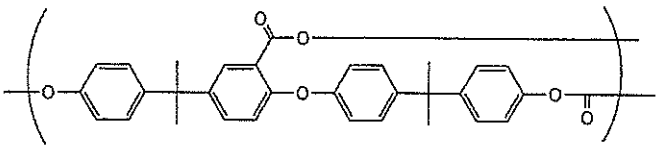
15. The process according to Claim 10 or 11 using a devolatilization assistant in the extruders.

16. The process according to Claim 10 or 11, wherein the viscosity-average molecular weight of the polycarbonate resin is 13,000 to 30,000.

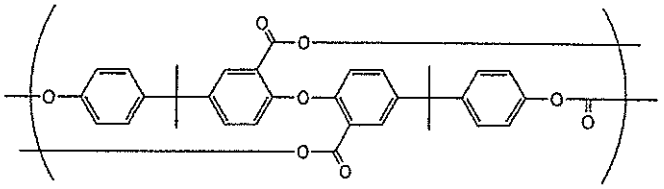
17. The process according to Claim 10, wherein the polycarbonate resin is obtainable from an ester exchange reaction of an aromatic dihydroxy compound and a carbonic acid diester, and satisfies such the following conditions (1) to (3) that:
(1) viscosity-average molecular weight is 13,000 to 30,000;
(2) the amount of the residual aromatic monohydroxy compound and the amount of the residual aromatic dihydroxy compound in the resin are each not more than 20 ppm; and
(3) the resin contains at least one of the structural units of the following formulae (1) to (5), with the total amount of such structural units being 1,000 to 6,000 ppm:



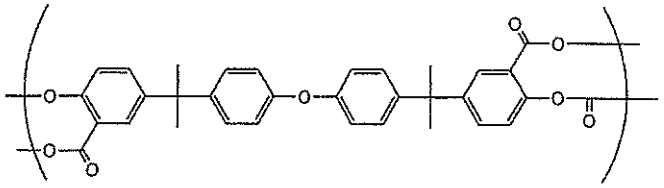
(1)



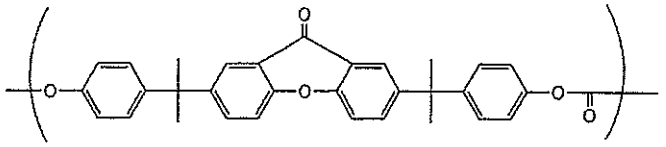
(2)



(3)



(4)



(5)